

Appl. No. 10/005,299
Amendment dated July 2, 2007
Reply to Office Action of April 11, 2007

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Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

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1. (original) An absorbent composition comprising:
a water-swellable, water-insoluble absorbent material; and
a cooling compound, wherein the cooling compound has an endothermic effect,
wherein the absorbent composition exhibits an absorbent capacity of at least 10 grams of 0.9 wt% NaCl saline per gram of the absorbent composition and a cooling effect of at least a 2°C reduction in temperature of at least a portion of the absorbent composition.
2. (original) The composition of claim 1, wherein the absorbent material is acidic, and wherein the cooling compound is a basic compound capable of neutralizing the acidic absorbent material.
3. (original) The composition of claim 2, wherein the absorbent material has a pH ranging from 1 to 6.5, and wherein the absorbent composition has a pH ranging from 4 to 6.5.
4. (withdrawn) The composition of claim 1, wherein the absorbent material is basic, and wherein the cooling compound is an acidic compound capable of neutralizing the basic absorbent material.
5. (withdrawn) The composition of claim 4, wherein the absorbent material has a pH ranging from 7.5 to 13, and wherein the absorbent composition has a pH ranging from 4 to 6.5.
6. (original) The composition of claim 1, wherein the absorbent material has a pH ranging from 6 to 7.5, and wherein the absorbent composition has a pH ranging from 4 to 6.5.
7. (original) The composition of claim 1, wherein the absorbent composition has a pH ranging from 3 to 8.
8. (withdrawn) The composition of claim 1, wherein the absorbent composition has a pH ranging from 4 to 7.

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9. (original) The composition of claim 1, wherein the absorbent composition exhibits an absorbent capacity of at least 70 percent of the absorbent capacity of the absorbent material.

10. (original) The composition of claim 1, wherein the absorbent composition exhibits an absorbent capacity of at least 90 percent of the absorbent capacity of the absorbent material.

11. (original) The composition of claim 1, wherein the absorbent composition exhibits an absorbent capacity at least equal to the absorbent capacity of the absorbent material.

12. (original) The composition of claim 1, wherein the cooling compound is chosen from the group consisting of: potassium chloride, sodium acetate trihydrate, ammonium nitrate, ammonium chloride, ammonium iodate, tetramethylammonium iodide, lithium perchlorate trihydrate, sodium cyanide dihydrate, sodium cyanate, potassium perchlorate, potassium nitrate, potassium iodide, potassium iodate, potassium permanganate, rubidium nitrate, rubidium iodide, cesium iodide, cesium chloride, cesium bromide, cesium perchlorate, cesium nitrate.

13. (original) The composition of claim 1, wherein the cooling compound has an endothermic effect greater than 10 kJ/mol.

14. (original) The composition of claim 1, wherein the cooling compound has an endothermic effect greater than 15 kJ/mol.

15. (original) The composition of claim 1, wherein the cooling compound has an endothermic effect greater than 20 kJ/mol.

16. (original) The composition of claim 1, wherein the absorbent material is a superabsorbent.

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17. (original) An absorbent composition comprising:
a water-swellaable, water-insoluble acidic absorbent material; and
a cooling compound, wherein the cooling compound has an endothermic effect and is a basic compound capable of neutralizing the acidic absorbent material,
wherein the absorbent composition exhibits an absorbent capacity of at least 10 grams of 0.9 wt% NaCl saline per gram of the absorbent composition and a cooling effect of at least a 2°C reduction in temperature of at least a portion of the absorbent composition.

18. (original) The composition of claim 17, wherein the absorbent material has a pH ranging from 1 to 6.5, and wherein the absorbent composition has a pH ranging from 4 to 6.5.

19. (original) The composition of claim 17, wherein the absorbent material is a superabsorbent.

20. (original) The composition of claim 17, wherein the absorbent composition has a pH ranging from 3 to 8.

21. (original) The composition of claim 17, wherein the absorbent composition has a pH ranging from 4 to 7.

22. (withdrawn) An absorbent composition comprising:
a water-swellaable, water-insoluble basic absorbent material; and
a cooling compound, wherein the cooling compound has an endothermic effect and is an acidic compound capable of neutralizing the basic absorbent material,
wherein the absorbent composition exhibits an absorbent capacity of at least 10 grams of 0.9 wt% NaCl saline per gram of the absorbent composition and a cooling effect of at least a 2°C reduction in temperature of at least a portion of the absorbent composition.

23. (withdrawn) The composition of claim 22, wherein the absorbent material has a pH ranging from 7.5 to 13, and wherein the absorbent composition has a pH ranging from 4 to 6.5.

24. (withdrawn) The composition of claim 22, wherein the absorbent material is a superabsorbent.

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25. (withdrawn) The composition of claim 22, wherein the absorbent composition has a pH ranging from 3 to 8.

26. (withdrawn) The composition of claim 22, wherein the absorbent composition has a pH ranging from 4 to 7.

27-43 (canceled)

44. (original) A method for producing an absorbent composition capable of exhibiting a cooling effect, the method comprising:

selecting a water-swellaable, water-insoluble absorbent material;

selecting a cooling compound having an endothermic effect; and

combining the absorbent material and the cooling compound to form the absorbent composition such that the absorbent composition exhibits an absorbent capacity of at least 10 grams of 0.9 wt% NaCl saline per gram of the absorbent composition and a cooling effect of at least a 2°C reduction in temperature of at least a portion of the absorbent composition.

45. (original) The method of claim 44, further comprising incorporating the combination into a disposable absorbent product.

46. (original) The method of claim 44, further comprising selling a disposable absorbent product incorporating the combination.

47. (withdrawn) An absorbent composition comprising:
a superabsorbent material having an exothermic heat of hydration; and
a means for adapting the absorbent composition such that the absorbent composition has a net cooling effect in at least a portion of the composition while absorbing aqueous liquid, wherein the absorbent composition exhibits an absorbent capacity of at least 10 grams of 0.9 wt% NaCl saline per gram of the absorbent composition.

48-52 (canceled)

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53. (withdrawn) An endothermic absorbent composition comprising:
a superabsorbent material; and
a cooling compound, wherein the endothermic absorbent composition is adapted to provide a cooling effect in at least a portion of the composition while absorbing aqueous liquid.
54. (withdrawn) The composition of claim 53, wherein the superabsorbent material is acidic, and wherein the cooling compound is a basic compound capable of neutralizing the acidic superabsorbent material.
55. (withdrawn) The composition of claim 54, wherein the superabsorbent material has a pH ranging from 1 to 6.5, and wherein the absorbent has a pH ranging from 4 to 6.5.
56. (withdrawn) The composition of claim 53, wherein the absorbent material is basic, and wherein the cooling compound is an acidic compound capable of neutralizing the basic absorbent material.
57. (withdrawn) The composition of claim 56, wherein the absorbent material has a pH ranging from 7.5 to 13, and wherein the absorbent has a pH ranging from 4 to 6.5.
58. (withdrawn) The composition of claim 53, wherein the absorbent material has a pH ranging from 6 to 7.5, and wherein the absorbent composition has a pH ranging from 4 to 6.5.
59. (withdrawn) The composition of claim 53, wherein the absorbent composition has a pH ranging from 3 to 8.
60. (withdrawn) The composition of claim 53, wherein the absorbent composition has a pH ranging from 4 to 7.
61. (withdrawn) The composition of claim 53, wherein the absorbent composition exhibits an absorbent capacity of at least 70 percent of the absorbent capacity of the absorbent material.

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62. (withdrawn) The composition of claim 53, wherein the absorbent composition exhibits an absorbent capacity of at least 90 percent of the absorbent capacity of the absorbent material.

63. (withdrawn) The composition of claim 53, wherein the absorbent composition exhibits an absorbent capacity at least equal to the absorbent capacity of the absorbent material.

64. (withdrawn) The composition of claim 53, wherein the cooling compound is chosen from the group consisting of: potassium chloride, sodium acetate trihydrate, ammonium nitrate, ammonium chloride, ammonium iodate, tetramethylammonium iodide, lithium perchlorate trihydrate, sodium cyanide dihydrate, sodium cyanate, potassium perchlorate, potassium nitrate, potassium iodide, potassium iodate, potassium permanganate, rubidium nitrate, rubidium iodide, cesium iodide, cesium chloride, cesium bromide, cesium perchlorate, cesium nitrate.

65. (withdrawn) The composition of claim 53, wherein the cooling compound has an endothermic effect greater than 10 kJ/mol.

66. (withdrawn) The composition of claim 53, wherein the cooling compound has an endothermic effect greater than 15 kJ/mol.

67. (withdrawn) The composition of claim 53, wherein the cooling compound has an endothermic effect greater than 20 kJ/mol.

68. (withdrawn) An absorbent composition comprising:
a superabsorbent material having an exothermic heat of hydration; and
a cooling compound having an endothermic effect, wherein the absorbent composition is adapted to provide a cooling effect in at least a portion of the composition while absorbing aqueous liquid.

69. (withdrawn) The composition of claim 68, wherein the superabsorbent material is acidic, and wherein the cooling compound is a basic compound capable of neutralizing the acidic superabsorbent material.

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70. (withdrawn) The composition of claim 69, wherein the superabsorbent material has a pH ranging from 1 to 6.5, and wherein the absorbent has a pH ranging from 4 to 6.5.

71. (withdrawn) The composition of claim 68, wherein the absorbent material is basic, and wherein the cooling compound is an acidic compound capable of neutralizing the basic absorbent material.

72. (withdrawn) The composition of claim 71, wherein the absorbent material has a pH ranging from 7.5 to 13, and wherein the absorbent has a pH ranging from 4 to 6.5.

73. (withdrawn) The composition of claim 68, wherein the absorbent material has a pH ranging from 6 to 7.5, and wherein the absorbent composition has a pH ranging from 4 to 6.5.

74. (withdrawn) The composition of claim 68, wherein the absorbent composition has a pH ranging from 3 to 8.

75. (withdrawn) The composition of claim 68, wherein the absorbent composition has a pH ranging from 4 to 7.

76. (withdrawn) The composition of claim 68, wherein the absorbent composition exhibits an absorbent capacity of at least 70 percent of the absorbent capacity of the absorbent material.

77. (withdrawn) The composition of claim 68, wherein the absorbent composition exhibits an absorbent capacity of at least 90 percent of the absorbent capacity of the absorbent material.

78. (withdrawn) The composition of claim 68, wherein the absorbent composition exhibits an absorbent capacity at least equal to the absorbent capacity of the absorbent material.

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79. (withdrawn) The composition of claim 68, wherein the cooling compound is chosen from the group consisting of: potassium chloride, sodium acetate trihydrate, ammonium nitrate, ammonium chloride, ammonium iodate, tetramethylammonium iodide, lithium perchlorate trihydrate, sodium cyanide dihydrate, sodium cyanate, potassium perchlorate, potassium nitrate, potassium iodide, potassium iodate, potassium permanganate, rubidium nitrate, rubidium iodide, cesium iodide, cesium chloride, cesium bromide, cesium perchlorate, cesium nitrate.

80. (withdrawn) The composition of claim 68, wherein the cooling compound has an endothermic effect greater than 10 kJ/mol.

81. (withdrawn) The composition of claim 68, wherein the cooling compound has an endothermic effect greater than 15 kJ/mol.

82. (withdrawn) The composition of claim 68, wherein the cooling compound has an endothermic effect greater than 20 kJ/mol.

83. (original) An absorbent composition comprising:
a superabsorbent material; and
a sufficient amount of cooling compound such that the absorbent composition is adapted to provide a cooling effect in at least a portion of the composition while absorbing aqueous liquid.

84. (original) The composition of claim 83, wherein the superabsorbent material is acidic, and wherein the cooling compound is a basic compound capable of neutralizing the acidic superabsorbent material.

85. (original) The composition of claim 84, wherein the superabsorbent material has a pH ranging from 1 to 6.5, and wherein the absorbent has a pH ranging from 4 to 6.5.

86. (withdrawn) The composition of claim 83, wherein the absorbent material is basic, and wherein the cooling compound is an acidic compound capable of neutralizing the basic absorbent material.

87. (withdrawn) The composition of claim 86, wherein the absorbent material has a pH ranging from 7.5 to 13, and wherein the absorbent has a pH ranging from 4 to 6.5.

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88. (original) The composition of claim 83, wherein the absorbent material has a pH ranging from 6 to 7.5, and wherein the absorbent composition has a pH ranging from 4 to 6.5.

89. (original) The composition of claim 83, wherein the absorbent composition has a pH ranging from 3 to 8.

90. (original) The composition of claim 83, wherein the absorbent composition has a pH ranging from 4 to 7.

91. (original) The composition of claim 83, wherein the absorbent composition exhibits an absorbent capacity of at least 70 percent of the absorbent capacity of the absorbent material.

92. (original) The composition of claim 83, wherein the absorbent composition exhibits an absorbent capacity of at least 90 percent of the absorbent capacity of the absorbent material.

93. (original) The composition of claim 83, wherein the absorbent composition exhibits an absorbent capacity at least equal to the absorbent capacity of the absorbent material.

94. (original) The composition of claim 83, wherein the cooling compound is chosen from the group consisting of: potassium chloride, sodium acetate trihydrate, ammonium nitrate, ammonium chloride, ammonium iodate, tetramethylammonium iodide, lithium perchlorate trihydrate, sodium cyanide dihydrate, sodium cyanate, potassium perchlorate, potassium nitrate, potassium iodide, potassium iodate, potassium permanganate, rubidium nitrate, rubidium iodide, cesium iodide, cesium chloride, cesium bromide, cesium perchlorate, cesium nitrate.

95. (original) The composition of claim 83, wherein the cooling compound has an endothermic effect greater than 10 kJ/mol.

96. (original) The composition of claim 83, wherein the cooling compound has an endothermic effect greater than 15 kJ/mol.

97. (original) The composition of claim 83, wherein the cooling compound has an endothermic effect greater than 20 kJ/mol.